

### REMARKS

This responds to the Office Action mailed on January 15, 2004.

Claims 1, 9, 16, and 23 are amended; as a result, claims 1-51 are now pending in this application.

### Information Disclosure Statement

Applicant respectfully requests that a copy of the *second page* the 1449 Form filed on October 17, 2003, marked as being considered and initialed by the Examiner, be returned with the next official communication.

### §103 Rejection of the Claims

**Claims 1-23, 25-29, 31-34, 37-38, 40, 43, and 45 were rejected under 35 USC § 103(a) as being unpatentable over John et al. (Journal of Lightwave Tech.).**

Independent claims 1, 9, 16, and 23 recite, among others, first voids, imaginary bonds connected the first voids, and second voids formed along the imaginary bonds. Independent claims 1, 9, 16, and 23 are amended to further clarify that the first voids are distinct from each other and that the second voids are distinct from each other and from the first voids.

Applicant is unable to find, among other things in John et al., either a showing or suggestion of the elements “the first voids are distinct from each other” and “the second voids are distinct from each other and from the first voids”. Thus, claims 1, 9, 16, and 23 are not obvious over John et al. Accordingly, Applicant requests that the rejection of claims 1, 9, 16, and 23 be reconsidered and withdrawn and that claims 1, 9, 16, and 23 and their dependent claims be allowed.

Independent claim 43 recites:

forming a periodic array of unit cells in a substrate, wherein each unit cell consists of a plurality of first voids joined by imaginary bonds, and wherein the periodic array forms an incomplete bandgap; and

forming one or more second voids along respective one or more of the imaginary bonds in each unit cell so as to modify the periodic array to create the complete photonic bandgap.

Applicant is unable to find in John et al. first voids in which the first voids are joined by “imaginary bonds” and in which the first voids “form an incomplete bandgap”. Applicant is also unable to find the element “forming one or more second voids along respective one or more of the imaginary bonds in each unit cell so as to modify the periodic array to create the complete photonic bandgap”. Additionally, Applicant is unable to find, among other things, in John et al. a suggestion to modify a periodic array with an incomplete bandgap into an array with a complete photonic bandgap that includes forming second voids along imaginary bonds. Therefore, claim 43 is not obvious over John et al. Accordingly, Applicant requests that the rejection of claim 43 be reconsidered and withdrawn and that claim 43 and its dependent claims be allowed.

Independent claims 29 and 38 recite elements at least similar to the elements of claims 43. Thus, claims 29 and 38 are also not obvious over John et al. for reasons at least similar to the reasons presented above regarding claim 43. Accordingly, Applicant requests that the rejection of claims 29 and 38 be reconsidered and withdrawn and that claims 29 and 38 their dependent claims be allowed.

**Claims 24, 30, 35, 36, 39, and 44 were rejected under 35 USC § 103(a) as being unpatentable over John et al.**

Applicant respectfully traverses the rejection. Claims 24, 30, 35, 36, 39, and 44 are dependent claims. In view of the reasons represented above regarding the independent claims, these dependent claims are also not obvious over John et al. for reasons at least similar to the reasons presented above regarding the independent claims plus the elements recited in the dependent claims.

Further, claims 24, 30, 39, and 44 recite that the first and second voids are formed by “surface transformation”. Notwithstanding that claims 24, 30, 39, and 44 are not obvious over John et al. in view of the reasons represented above regarding the independent claims, claims 24, 30, 39, and 44 are further not obvious over John et al. because forming the first and second voids by the “surface transformation” is not found in John et al.

Accordingly, Applicant requests that the rejection of claims 24, 30, 35, 36, 39, and 44 be reconsidered and withdrawn and that claims 24, 30, 35, 36, 39, and 44 be allowed.

**CONCLUSION**

Applicant respectfully submits that the claims are in condition for allowance and notification to that effect is earnestly requested. The Examiner is invited to telephone Applicant's representative (612) 373-6969 to facilitate prosecution of this application.

If necessary, please charge any additional fees or credit overpayment to Deposit Account No. 19-0743.

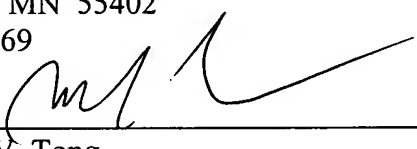
Respectfully submitted,

LEONARD FORBES

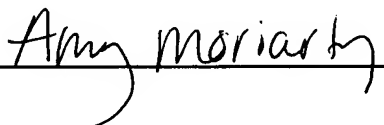
By his Representatives,

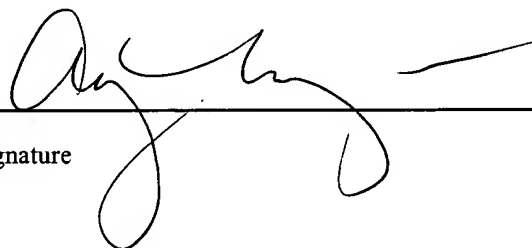
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Date 4/15/04

By   
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**CERTIFICATE UNDER 37 CFR 1.8:** The undersigned hereby certifies that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail, in an envelope addressed to: Mail Stop AF, Commissioner of Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on this 15th day of April, 2004.

  
Name

  
Signature